

# IDEM SPR, SMR, and SMR-F Medium Duty Non-Contact Magnetic Safety Switches



## SPR Series Plastic Housing

## SMR Series Stainless Steel Housing

## SMR-F Series Stainless Steel Housing Rear Mount

- Universal housing - 22mm fixing footprint suitable for most general applications; 50 mm wide body
- Withstands environments where high humidity or hose down is required.
- Wide 12 mm sensing, high tolerance to misalignment
- Long life switching capability - up to 1A
- Will operate with most safety relays
- Codes are not unique and can be used with other models of the same series
- Available with 2m, 5m, or 10m cable or 250mm pigtail with quick-disconnect cable

### SMR Series, SMR-F Only

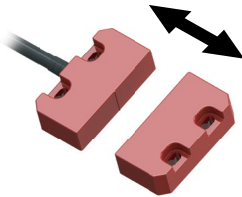
- Specifically designed for food processing applications
- Suitable for CIP SIP cleaning - Food Splash Zones per EHEDG guidelines
- 316 Stainless steel mirror polished finish
- Can be high-pressure hosed at high temperature - IP69K rated

### SMR-F Only

- Same as SMR series, but with no-food-trap housing - rear mounting holes
- 5m cable only

**See Dimensions later in this section.**

## Actuator Operating Direction



**SPR, SMR  
SMR-F**

SPR, SMR, and SMR-F Non-Contact Magnetic Safety Switches					
Part Number	Price	Body Material	Cable Length	Circuits	Contact Type / Rating
<b>Pigtail Versions</b>					
<b>SPR-111013</b>	\$98.00	Plastic	2m	2 NC, 1 NO	Medium duty / 1A
<b>SPR-111014</b>	\$104.00		5m		
<b>SPR-111015</b>	\$118.00		10m		
<b>SMR-139013</b>	\$125.00	Stainless steel	2m		
<b>SMR-139014</b>	\$129.00		5m		
<b>SMR-139015</b>	\$143.00		10m		
<b>SMR-F-137014</b>	\$127.00		5m		
<b>Quick Disconnect Versions (M12 8-pin)</b>					
<b>SPR-111016</b>	\$123.00	Plastic	250mm	2 NC, 1 NO	Medium duty / 1A
<b>SMR-139016</b>	\$161.00	Stainless steel	250mm		

Female Quick Disconnect Lead			
Part Number	Price	Description	Exit Type/Cable Length
<b>140101</b>	\$31.00	Female QD Lead	M12 Female 5m, 8-pin
<b>140102</b>	\$39.00		M12 Female 10m, 8-pin



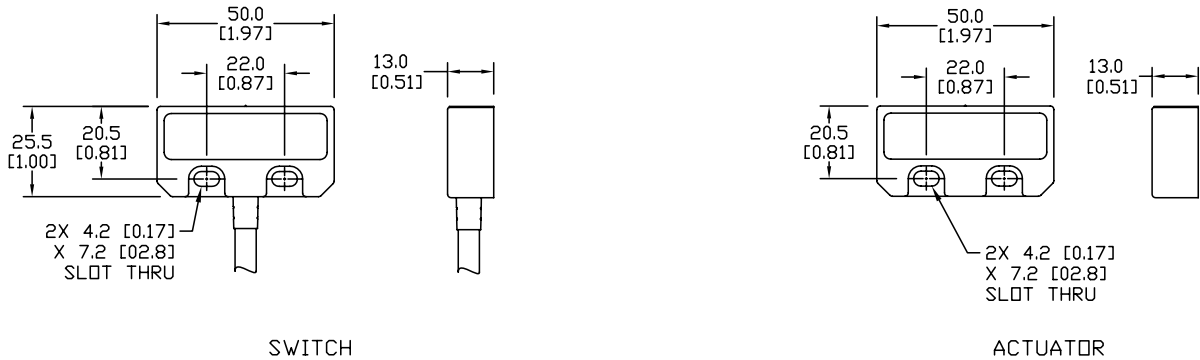
# IDEM SPR, SMR, and SMR-F Medium Duty Non-Contact Magnetic Safety Switches

## Dimensions

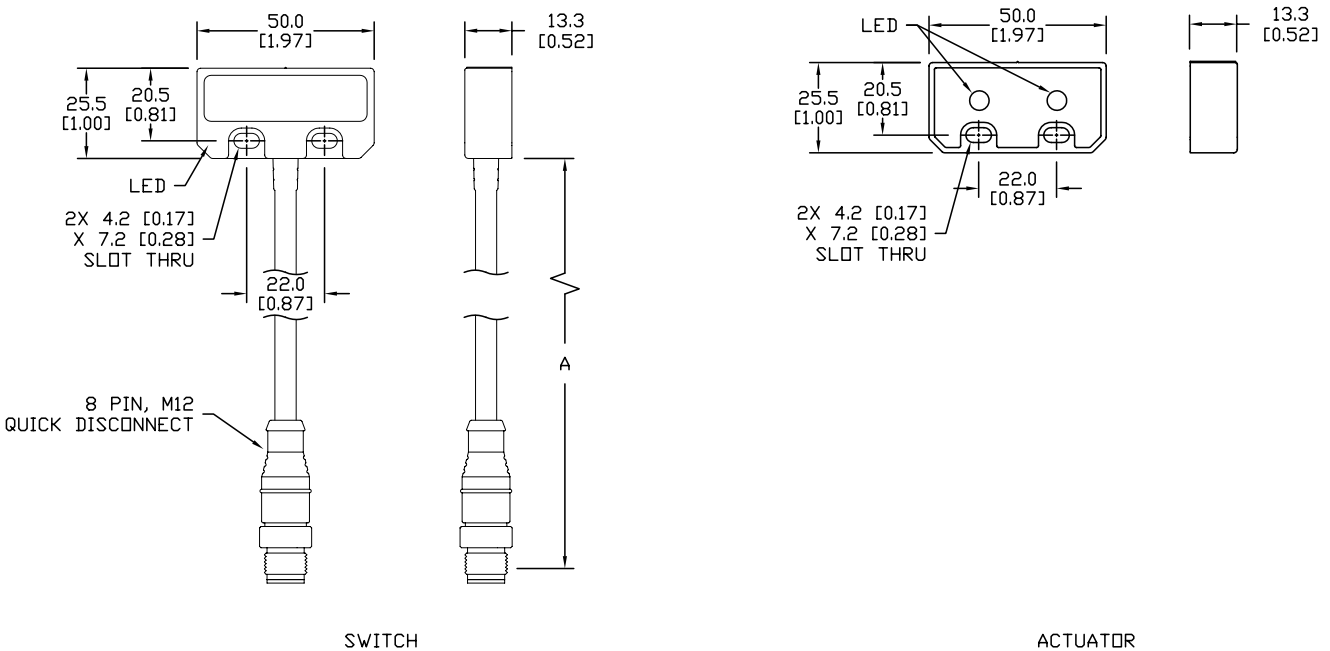
mm [inch]

### SPR Series

#### Pigtail



#### Quick Disconnect



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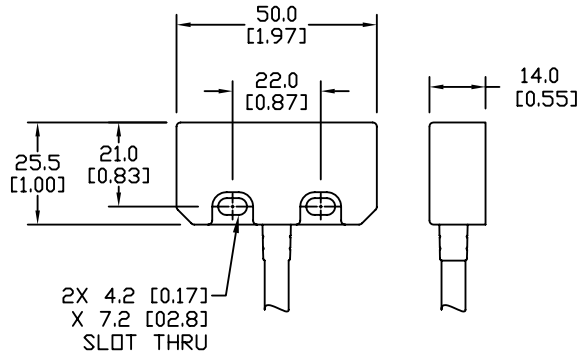
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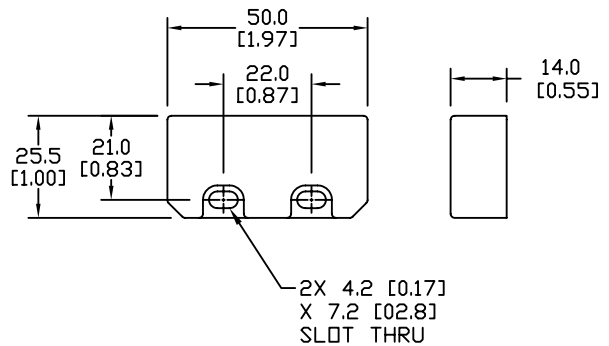
mm [inch]

### SPR Series

#### Pigtail

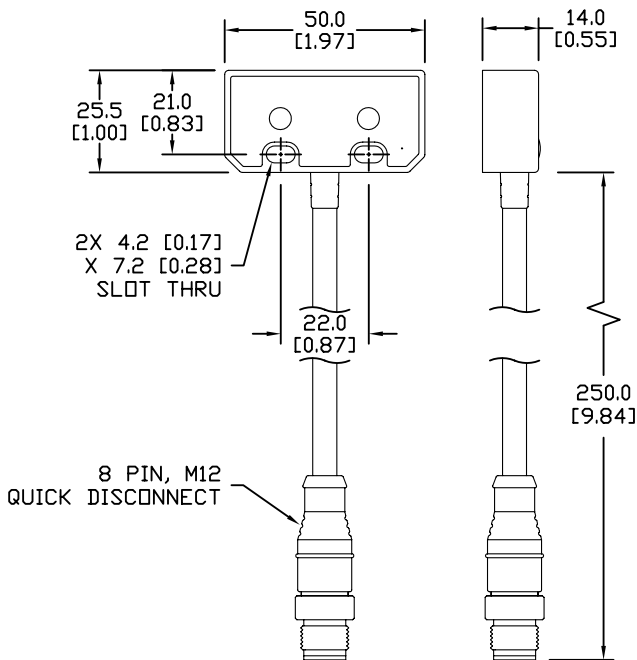


SWITCH

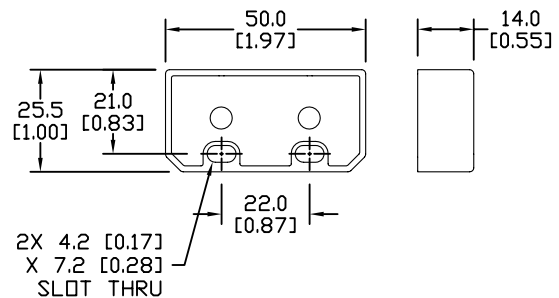


ACTUATOR

#### Quick Disconnect



SWITCH



ACTUATOR

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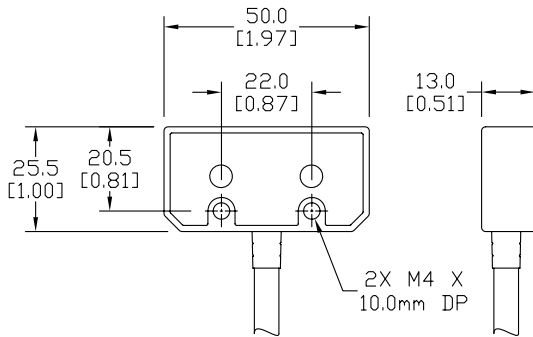
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## Dimensions

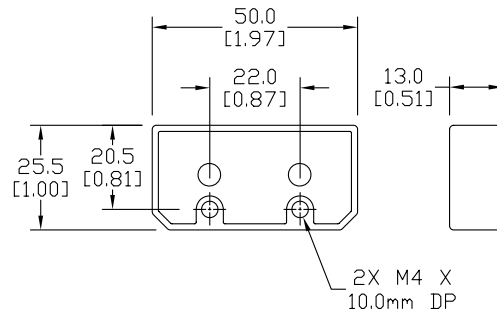
mm [inch]

### SMR Series

#### Pigtail



SWITCH  
BACK VIEW



ACTUATOR  
BACK VIEW

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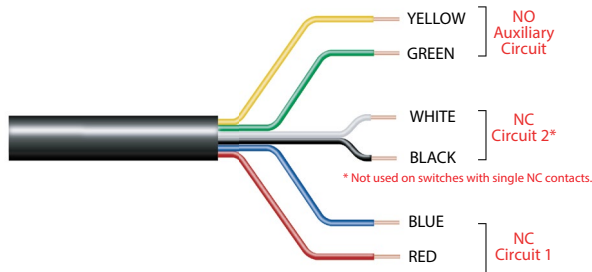
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# IDEM Non-Contact Safety Switches Electrical Connections and Dimensions

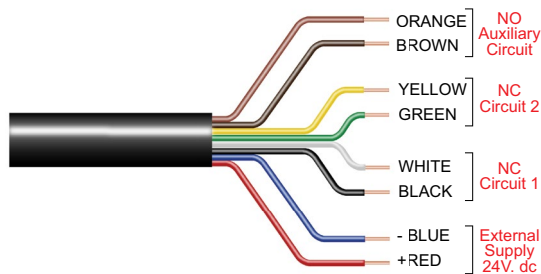
## Electrical Connections

### Magnetic Switches



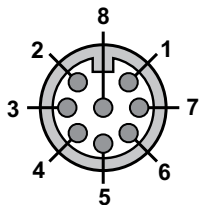
Magnetic Switches - Electrical Connections		
Quick Disconnect Connector Pin Out	Lead Color	Type of Circuit (Actuator Present)
4	Yellow	NO
6	Green	NO
7	Black	NC2
1	White	NC2
2	Red	NC1
3	Blue	NC1

### Coded Magnetic and RFID Switches



Coded Magnetic Switches - Electrical Connections			
Quick Disconnect Connector Pin Out	Lead Color	Type of Circuit (Actuator Present)	Output Types (Solid State)
8	Orange	Auxiliary (NO)	200 mA max. 24 VDC
5	Brown	Auxiliary (NO)	
4	Yellow	NC2 +	200 mA max. 24 VDC (Optocoupler)
6	Green	NC2 -	
7	Black	NC1 +	200 mA max. 24 VDC (Optocoupler)
1	White	NC1 -	
2	Red	Supply +24 VDC	Supply 24 VDC +10% / -15%
3	Blue	Supply 0VDC	

### Connection Colors

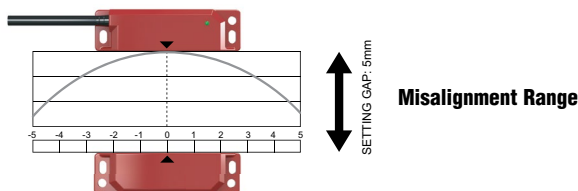


Pin View from Switch  
M12 Male

# IDEM Non-Contact Safety Switches Specifications

Non-contact Safety Switches Specifications			
	Non-Contact Magnetic Switches	Non-Contact Coded Magnetic Switches	Non-Contact RFID Coded Switches
<b>Safety Classification and Reliability Data</b>			
<b>Switching Reliability (B10d)</b>	3.3 x 10 <sup>6</sup> operations at 100 mA load		No mechanical parts implemented
<b>ISO 13849-1</b>	Up to category 4 with safety relay		
<b>ISO 13849-1</b>	Up to PLe depending upon system architecture		
<b>EN 62061</b>	Up to SIL3 depending upon system architecture		
<b>Safety Data - Annual Usage</b>	8 cycles per hour / 24 hours per day / 365 days		
<b>PFHd</b>	2.8 x 10 <sup>-10</sup>	2.6 x 10 <sup>-10</sup>	4.77 x 10 <sup>-10</sup>
<b>Proof Test Interval (Life)</b>	20 Years		
<b>MTTFd</b>	866 Years		1100 years
<b>Agency Approvals</b>	CE, cULus		
<b>Electrical and General Specifications</b>			
<b>Contact Ratings: Safety Contact NC</b>	MPR: Voltage free: 250 VAC, 0.5 A Max.	24 VDC, 0.2A Max. (Optocoupler)	
	LPR, LMR, SPR, SMR, SMR-F: Voltage free: 250 VAC, 1.0A Max.		
	CPR, CMR, CMR-F, WPR: Voltage free: 250 VAC, 2.0A Max.		
<b>Contact Ratings: Monitoring (Auxiliary) Contact NO</b>	Voltage free: 24 VDC, 0.2A Max.	24 VDC, 0.2A Max.	
<b>Recommended Fuses (NC Circuits)</b>	MPR: Fuse externally 0.4A (F)	NA	
	LPR, LMR, SPR, SMR, SMR-F, CMR, CMR-F: Fuse externally 0.8A (F)		
	CPR, WPR: Fuse externally 1.6A (F)		
<b>Contact Release Time</b>	<2ms	NA	
<b>Initial Contact Resistance</b>	<500 milliohm	NA	
<b>Minimum Switched Current</b>	10 VDC, 1mA		
<b>Dielectric Withstand</b>	250 VAC		
<b>Insulation Resistance</b>	100 Megohms		
<b>Recommended Setting Gap</b>	5mm		
<b>NC Switching Distance</b>	Sao (assured ON) 8mm close; Sar (assured OFF) 20 mm open		
<b>NC Switching Operation</b>	For all switches the NC circuits are closed when the guard is closed and the actuator is present.		
<b>NO Switching Operation</b>	Opens before NC circuits close		
<b>Tolerance to Misalignment</b>	5mm in any direction from 5mm setting gap (See Misalignment Range drawing on this page)		
<b>Switching Frequency</b>	1.0 Hz Max.		
<b>Approach Speed</b>	200 mm per minute to 1000 mm per second		
<b>Body Material - Polyester</b>	CPR, LPR, MPR, SPR, WPR	CPC, LPC, MPC, SPC, WPC	LPF, SPF
<b>Body Material - 316 Stainless Steel</b>	CMR, CMR-F, LMR, SMR, SMR-F	CMC, CMC-F, LMC, SMC, SMC-F	NA
<b>Operating Temperature Range</b>	Polyester: -25° to +80°C (-13° to +176° F)		
	316 Stainless Steel: -25° to +105° C (-13° to +221° F)		NA
<b>Storage Temperature (Low)</b>	-55° to -40° C (-67° to -40° F)		
<b>Enclosure Protection</b>	IP67, IP69K		
<b>Shock Resistance</b>	IEC 68-2-27 11 ms 30g		
<b>Vibration Resistance</b>	IEC 68-2-6 10-55 Hz 1mm		
<b>Cable Type</b>	PVC, 6.5 mm outside diameter max.		PVC, 6mm outer diameter max.
<b>Mounting Bolts (recommended)</b>	2 x M4; Tightening torque: 1.0 Nm		

Note: Always mount onto non-Ferrous materials.



# Safety Products



***Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application. AutomationDirect does not provide design or consulting services, and cannot advise whether any specific application or use of our products would ensure compliance with the safety requirements for any application.***